



**TECH CENTER 1600/2900** 

1600

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/478,188D

DATE: 03/19/2003 TIME: 10:48:23

```
1 <110> APPLICANT: SHEN, BEN
              LIU, WEN
              CHRISTENSON, STEVEN
              STANDAGE, SCOTT
      5 <120> TITLE OF INVENTION: GENE CLUSTER FOR PRODUCTION OF THE ENEDIYNE ANTITUMOR
ANTIBIOTIC C-1027
      6 <130> FILE REFERENCE: 407T-896010US
C--> 7 <140> CURRENT APPLICATION NUMBER: US/09/478,188D
      8 <141> CURRENT FILING DATE: 2000-01-05
      9 <150> PRIOR APPLICATION NUMBER: US 60/115,434
     10 <151> PRIOR FILING DATE: 1999-01-05
     11 <160> NUMBER OF SEQ ID NOS: 2
     12 <170> SOFTWARE: PatentIn version 3.0
     14 <210> SEQ ID NO: 1
     15 <211> LENGTH: 42000
     16 <212> TYPE: DNA
                                                               ENTERED
     17 <213> ORGANISM: Artificial
     18 <220> FEATURE:
     19 <223> OTHER INFORMATION: cDNA
     20 <220> FEATURE:
     21 <221> NAME/KEY: CDS
     22 <222> LOCATION: (11)..(658)
     23 <400> SEQUENCE: 1
                                                                                     49
              gtcgactcta gag gat ccc ggg tgc gga gta ggg gtt acg gac gaa gga
                         Glu Asp Pro Gly Cys Gly Val Gly Val Thr Asp Glu Gly
     25
     26
                                                                                     97
              ggg gtg ccc ggc gac gcc tgc ggc gaa ggg cgg ttc ctt gag ttc gag
     27
              Gly Val Pro Gly Asp Ala Cys Gly Glu Gly Arg Phe Leu Glu Phe Glu
     28
     29
                  15
                                      20
                                                                                    145
     30
              qcc qqt qqc gag gac gac gtg gtc cgc gtc gag gat ctg cgt gtc ggg
              Ala Gly Gly Glu Asp Asp Val Val Arg Val Glu Asp Leu Arg Val Gly
     31
     32
                                  35
                                                                                    193
              gag cgg ccc agg gcg cag ccc ctc ggt cag gta cgg ggt gag gcc cct
     33
              Glu Arg Pro Arg Ala Gln Pro Leu Gly Gln Val Arg Gly Glu Ala Pro
     34
                                                   55
     35
              gac ggt cac ete gaa gea geg gte gtg gga eeg gge gte gag ege ete
                                                                                    241
     36
              Asp Gly His Leu Glu Ala Ala Val Val Gly Pro Gly Val Glu Arg Leu
     37
                                              70
     38
                                                                                    289
              ccc gtc cgc ttc cac aag gac gac gcc ggg aca gga ctc ccg tgc ggc
     39
              Pro Val Arg Phe His Lys Asp Asp Ala Gly Thr Gly Leu Pro Cys Gly
     40
                                          85
     41
                                                                                    337
              ctc gac cag tcg ggc gtc gag gta gtc ctg gaa gat gcg gcg ggg ggc
     42
              Leu Asp Gln Ser Gly Val Glu Val Val Leu Glu Asp Ala Ala Gly Gly
     43
                                      100
                                                           105
                  95
     44
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/478,188D

DATE: 03/19/2003
TIME: 10:48:23

45	ggg	gcc	ctg	ttc	ggt	gaa	ctt	cca	cga	agc	cca	gcg	ccg	ggg	cca	gtc	385
46	Gly	Ala	Leu	Phe	Gly	Glu	Leu	Pro	Arg	Ser	Pro	Ala	Pro	Gly	Pro	Val	
47	110					115					120					125	
48	qcq	ccg	gtc	ggc	ctc	ctg	gtt	ggc	cca	gtt	gat	gaa	gtc	gag	cac	gtc	433
49	Ala	Pro	Val	Gly	Leu	Leu	Val	Gly	Pro	Val	Asp	Glu	Val	Glu	His	Val	
50				-	130					135					140		
51	ctc	aca	σaa	cac	cqa	cat	cct	qcc	ggc	ctg	gat	att	gaa	gac	gtg	gtc	481
52	Leu	Ala	Glu	His	Ara	His	Pro	Ála	Gly	Leu	Asp	Ile	Glu	Asp	Val	Val	
53	Lou			145	5				150		-			155			
54	cca.	aaa	att		atc	acq	ata	ata	aac	σac	acc	aac	cga	aca	gta	ggc	529
55	Pro	G1 v	Val	Ala	Val	Thr	Val	Tle	Glv	Asp	Ala	Glv	Ara	Ālā	Val	Gly	
56	110	Ory	160	7114	141			165	<u>1</u>			1	170			-	
57	aac	aca		ctc	cad	gag	rac		ttc	cad	caa	tct	t.ct	cac	gaa	atσ	577
58	Clar	712	Dro	Tou	Cln	Glu	Asn	Asn	Phe	Gln	Ara	Ser	Ser	Ara	Glu	Met	
	Сту	175	FIO	пеи	GIII	GIU	180	тор	1110	0111	1119	185	001	9			
59			~~~	+ - +	200	~ a+		cat	acc	tac	cad		cac	CCC	tac	gac	625
60	aag	Cag	geg	Lat. Tr.v.∞	7xa	Clu	7 ra	Ara	Λla	Cve	Cln	Δla	Ara	Pro	Tyr	Asp	
61		GIII	Ala	тÀт	ALG	195	Arg	Arg	Ата	Cys	200	пια	mrg	110	- y -	205	
62	190		. 4.					aa+	ast.	~~~		~~~~	root.	ccc	ccac.		678
63												yaa	geec		ccgc	tgactc	0,0
64	GIn	His	Pro	GIY		Arg	Thr	Arg	нтѕ		птъ						
. 65					210					215				++~	~ ~ + ~	aataa	738
66	agg	gcgg	cgc (	gtcg	cgcg	et c	ccgt	cggt	g tc	ctcg	ctga	ctg	yaay		at aa	acctgg	798
67	cgt	caac	tcc	actg	atcc	gt a	aggg	gatc	g cg	ggag	Egga	tac	gggu	cag	giccg	tgcacg	858
68	atc	gtgg	cac	caga	cagat	cc a	ccac	gtcga	a ta	ggca	ctcg	tga	geeg	cgc	eegg	ggctcg	918
69	acg	gggc	ggg	gcac	cggca	ag g	ggcg	gccg	c gt	gatc	agcc	gga	geet	gtc	cggg	ggcgtg	978
70	cgt	gcgg	ggc	gtca	gctgi	tc g	atgt	cggga	a ac	gcca	ggga	cgt	cgat	CTC	ggtg	cgggcg	
71	tag	tggt:	tga .	agta	gttg	gt g	taga	ggtt	c ac	ggcc	acgt	gga	cgaa	gac	ctcg	gcgagc	1038
72	tcg	gtgt	ccg	tcca	tacat	tg t	gcca	cggc	c gc	gttc	cacg	agg	cgtc	aga	cacc.	tcgccc	1098
73	act	tcgc	cgg	cgat	ctcc	ct g	gcca	cctg	g ac	cagt	gctt	cga	gctt	cac	gtcg.	tcgccg	1158
74	ggc	gtcc	CCC	ggcg	aatc	gc c	acgg	tctc	c to	cagc	gtga	aac	ccgc	gac	cttc	gccgac	1218
75	acc	gtgt	gcg	ccgc	ctgg	ca g	tacg	cgca	c gc	gtcg	accg	cgc	ccac	ggc	gagg	gcgatc	1278
76	gcc	tcgc	gtg	tgcg	ggcgt	tc g	aacg	ttcc	a tg	ttcg	gcga	cgg	ctcc	ggt	gatc	gcggcg	1338
77	tag	gttt	cca	ggac	cacg	gg g	gaat	gggc	c at	tccc	ccgt	gga	tgtt	gag	cact	cgcccg	1398
78	aac	cgct	tct	ccag	tcgg	cg c	agga:	tgtc	t cc	gccg	gctg	cgg	gtgc	ggt	gtcg	atggtg	1458
79	tgg	acgg	gaa	tccg	cggca	at g	ggaa	tgcc <sup>.</sup>	t ct	cctc	gtag	tga	tggg	agt	tcct	cgtccc	1518
80	tcc	agtc	tgc	ccaa	gcac	ct c	cccc	ggtg	a gc	tgtc	ccgg	ccg	ccct	ccg	gccc	cttcta	1578
81	ggc	aggt	cgc	ccgg	tggt	gc g	gccc	cagg	a cg	tcac	ctcg	ccg	cacc	acc	ggga	gccccg	1638
82	agg	ggcg	agg	tcag	aggc	cg a	gcac	ctcc	t cg	gcca	gggc	ggt	gccc	cga	acac	gggcct	1698
83	cga	tctt	ggc	gaag	gcca	gg t	cgcg	tgtg	g tg	gagg	tgtc	gtc	ggcg	aac	gggg	agaagc	1758
84	cgc	agtc	gtc	gcag	gttc	cc a	gttg	ctcg	a cg	ggga	tgta	gcg	ggcg	gcg	agca	ggatgc	1818
85	aat	caca	tac	ctgc	tcgg	gg g	tctc	gacc	a ct	gggt	cgat	cgg	gtcg	gtc	accc	cgagga	1878
86	aga	caca	aac	ggca	gggg	gc a	ggtg	gtca	c gg	acga	tgct	cag	gacc	cgc	tcgg	ggtccg	1938
87	ctt	cacc	adc	cagt	tcga	ga t	agaa	gttg	c cc	gcct	tgag	ctg	gaag	agc	ttgg	gcagca	1998
88	att	caac	σta	atca	atqt	cq a	gact	atac	g tg	gagt	cctg	gtc	gccg	ccg	gggc	aggtgt	2058
89	gta	cacc	gat	acaa	acaa.	tť t	cctc	ggca	c ta	aagc	gccc	cag	gact	tcg	ttgt	tgaggg	2118
90	caa	tgaa	atc	atca	agga	cq c	cqcc	gcta	a aa	tcga	gctt	gaq	ggac	agc	cgcc	cctcgg	2178
91	taa	agto	gag	ctaa	acca	ca t	atac	cccc	d ca	tcca	ggca	gcc	tcgq	atg	tcgg	cttcgg	2238
92	cat	catio	aac	gagg	tcac	ac a	ggaa	ctac	t ca	cqqa	ggta	gcc	ctcq	atg	ggag	tggcgg	2298
93	aut	agag	uau Jao	acta n-ss	addd	ca a	agga	taca	a tσ	acca	ccta	ctt	caqq	gga	cgqt	ccgtga	2358
<i>J J</i>	996	agug	3~Y	3009	-559	- 5 5	555	- 5- 5	- 9	- 5	- 5		, ,				

# RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/478,188D TIME: 10:48:23

DATE: 03/19/2003

•							2418
94	gctgccgtgc						
95	tgatgctggg						2478
96	agagggtgtc						2538
97					ggtgtccgcg		2598
98					ggcatgcgcg		2658
99	gcaggagtgt						2718
100					: tttgattgcc		2778
101					atgtatgggg		2838
102	gcctgcgggg	ttctaggagc	cggtcgcggc	cacggtggag	gaggtgccca	gctgggagcg	2898
103					gggtcgacgg		2958
104	ggcaccttgc	cggtagacgc	cttcggggtc	ggagtcccgg	tcatggggga	gcaggaagaa	3018
105	gacccggcgc	cggtacagac	cgctgtccgg	gtccgcttcg	gcgtcggccc	cgagttcgat	3078
106	gtagccgatc	atgcggccgt	cgcgggcgta	gcgcggcttg	ttcttgcgcc	ggggggtctt	3138
107	gtccagggcc	tggcggacgt	agtcgagtcc	ctcgggatct	tcgagccaca	cgaccttcgc	3198
108	ctcgtgaacg	agatcgctgt	cggtcagtag	cgagctcatg	gcggcgacct	ctccttcgtc	3258
109					gttcgtctgc		3318
110					aagcacgggc		3378
111					cagtgcctcc		3438
112					ttccggccgt		3498
113					: cgggtggcga		3558
114					ctgtaggacg		3618
115					aggcagcact		3678
116					gcgatgcgga		3738
117					ccttcggtga		3798
118					ttgtcgatct		3858
119					cagaaggcga		3918
120					tgcgtgggtg		3978
121					ccggtcagca		4038
122					acgatgaggc		4098
123					cggtccatga		4158
124					acgtcgagga		4218
125					gccccgacgt		4278
126					cgcccttcgg		4338
127	gaageageeg	tcgaggagaa	ggtggaaged	aaaaataaaa	atgtcctggg	aggaggcact	4398
128					cgcatacggc		4458
129					ccgtcgaggg		4518
130					gccttcatac		4578
131					aacagcccgc		4638
132					gcagctttct		4698
							4758
133 134					ccctccacgt tcggtcaggc		4818
135							4878
					ggagcggcct		4938
136	-				tgctgagcgg		4998
137					cttcgagatg		5058
138					tgcggacaga		5118
139					ggccggccga		
140					gcacgagcgg		5178
141					cctcgtccgt		5238
142	ctggcttcag	cctcctgacc	cccaataagg	cgaaagctgc	: tggtcaagca	tctttcgtga	5298

### RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/478,188D TIME: 10:48:23

DATE: 03/19/2003

143	cactcggcga	gggactgaag	ggactgtctt	tcggaatgag	tgtagggggt	tgtcgggtgg	5358
144				atctgttcgg			5418
145				tgcggcgggc			5478
146	ggagggactg	agggtctgta	tggagcgata	agagggtctg	aaggggcgga	gagagtttcg	5538
147				caggtcagag			5598
148				gagctgagta			5658
149				tgagcttata			5718
150				tgactgcgtt			5778
151				gggcgggcga			5838
152				cccctgtgag			5898
153				cctcctcctg			5958
154				ctctgccggg			6018
155				gacgatgtcc			6078
156				ctccagaagc			6138
157				acgtatggct			6198
158				tgcgcgagcg			6258
159				gccacgactt			6318
160				cgcacatagc			6378
161				acgggaagcc			6438
162				gacacccggt			6498
163				gcgagttggt			6558
164				tcctcgcgcg			6618
165				gccaggcggt			6678
166	_			gctgggtttt			6738
167				gccgctccgg			6798
168	-			gctggtggac			6858
169				ggggcggggc			6918
170				aggccgcccg			6978
171				cgttgcccag			7038
172				ggctggccgc			7098
173				tgatcagccc			7158
174				gcgcggccgg			7218
175				tggccgggga			7278
176				gcgacttcgc			7338
177				gagcggaccc			7398
178				cctacaacgc			7458
179				cggggcacag			7518
180				tecegeeeee			7578
181				ctcaccggtc			7638
182				ctcgccgccc			7698
183				cacatcgagg			7758
184				gagcttcagc			7818
185				atagaccgtg			7878
186				ggagaggctg			7938
187				gcgcagtttc			7998
188				ctccaggacg			8058
189				geggegeeee			8118
190				gatgatgacc			8178
191				cgaggcgttc			8238
			- 559	J- JJ-5-30	, , ,,,,,,	٠	

## RAW SEQUENCE LISTING

DATE: 03/19/2003 PATENT APPLICATION: US/09/478,188D TIME: 10:48:23

192	cagcttgcgc	agcgggtcca	tcaggccgag	gtaggagacc	ggtgtggagc	gcgacgaggc	8298
193	ggcgatcgcg	gactggtcga	caaagaccgc	gtcggggtgc	gcctccatga	atgccccgga	8358
194	gatcaggctg	ctcttgccgg	aacccgccac	cccggtcacc	gcggtcagca	caccggtggg	8418
195	cacggccacg	gagacctgct	tcaggttgtg	gagatccgcg	ttctccacgg	tcagctcccc	8478
196	cgtgggcggg	cggacctcct	ccttcacgcg	ggccccccgc	cgcagagcct	ccccggtccg	8538
197	ggtcttcgcc	ttccgcagct	tcgcgaagga	cccctcgaac	acgatctcgc	ccccgtgcac	8598
198				gtcggcgatc			8658
199				gcgcagcgcg			8718
200				gggctcgtcg			8778
201				cagccgctgc			8838
202				gagcccgatg			8898
203				ggccggctcc			8958
204				gtcggcgatg			9018
205				ccggcaggag			9078
206				gctcagcgcg			9138
207				gtagttcgtc			9198
208				cagcagcgtg			9258
209				gccggacttc			9318
210				cgccccgtcg			9378
211				ctggccgaga			9438
212				gacgccgagc			9498
213				gatcatcggc			9558
214				cttctggtcg			9618
215				gtacttcgga			9678
216				ctccacggcc			9738
217				gaccgtgatc			9798
218				gcccgcgatg			9858
219				ggtgacgctc			9918
220				aaaccggcgg			9978
221				ccgtgctgac			10038
222				ccgatccccc			10098
223				gatcggcggc			10158
224				ggtgtccagt			10218
225				cgagttcatc			10278
226				ggcgacgtac			10338
227				gagcagcacc			10398
228				gaacaccggt			10458
229				gatgtgcctc			10518
230				cgccgcggtc			10578
231				ggggacccgg			10638
232				cgccgcggcg			10698
233				cgcccactc			10758
234				caccgctgcc			10818
235				cgtcttggcg			10878
236				gacgccccgc			10938
237				gcccagcccc			10998
238				cttgcgcagg			11058
239				gaactggcag			11118
240				ggaaagtccc			11178

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/478,188D

DATE: 03/19/2003 TIME: 10:48:24

Input Set : N:\Crf4\03042003\I478188D.raw
Output Set: N:\CRF4\03192003\I478188D.raw

### Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:1; Line(s) 5

### Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:1,2

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/478,188D

DATE: 03/19/2003 TIME: 10:48:24

Input Set : N:\Crf4\03042003\I478188D.raw
Output Set: N:\CRF4\03192003\I478188D.raw

L:7 M:270 C: Current Application Number differs, Wrong Format